What is claimed is:

1. A semiconductor processing article comprising a quartz body characterized by a surface roughness having a first component with an average deviation from a first mean surface of about 2.5 to 50 microns, and a second component with an average deviation from a second mean surface of about 0.25 to 5 microns.

2. The article of claim 1, comprising a quartz body characterized by a surface roughness having a first component with an average deviation from a first mean surface of about 5 to 25 microns, and a second component with an average deviation from a second mean surface of about 0.25 to 5 microns.

3. The article of claim 1, comprising a quartz body characterized by a surface roughness having a first component with an average deviation from a first mean surface of about 5 to 25 microns, and a second component with an average deviation from a second mean surface of about 0.5 to 2.5 microns.

4. The article of claim 1, comprising a liner, process tube, shield, baffle, paddle, cantilever arm, carrier or boat.

5. The article of claim 1, comprising a cantilever arm, carrier or boat that is cycled into and out of a LPCVD furnace during processing of a semiconductor wafer.

6. A semiconductor furnace system, comprising a quartz processing article characterized by a surface roughness having a first component with an average deviation from a first mean surface of about 2.5 to 50 microns, and a second component with an average deviation from a second mean surface of about 0.25 to 5 microns.

7. The furnace system of claim 6, wherein said article comprises a quartz body characterized by a surface roughness having

a first component with an average deviation from a first mean surface of about 5 to 25 microns, and a second component with an average deviation from a second mean surface of about 0.25 to 5 microns.

8. The furnace system of claim 6, wherein said article comprises a quartz body characterized by a surface roughness having a first component with an average deviation from a first mean surface of about 5 to 25 microns, and a second component with an average deviation from a second mean surface of about 0.5 to 2.5 microns.

9. The furnace system of claim 6, wherein said quartz processing article comprises a liner, process tube, paddle, carrier or boat.

10. The furnace system of claim 6, comprising a processing chamber to maintain a reduced pressure having at least one gas inlet to provide a reactive gas mixture therein and at least one exhaust outlet, a support comprising said quartz processing article positioned within said chamber and an article to be treated positioned on said support.

11. The furnace system of claim 10, wherein said article is a thin semiconductor substrate.

12. A method of preparing a quartz processing article for a semiconductor furnace, comprising mechanically roughening a surface of said article and chemically roughening said surface.

13. The method of claim 12 comprising mechanically blasting said surface of said article to roughen said surface and chemically etching said surface to reduce surface micro cracks and to provide a microscopic surface roughening.

14. The method of claim 12 comprising mechanically blasting said surface and chemically etching said surface to provide a quartz processing article characterized by a surface roughness having a first component with an average deviation from a first mean surface

of about 5 to 25 microns, and a second component with an average deviation from a second mean surface of about 0.5 to 2.5 microns.

15. The method of claim 12, wherein said mechanically roughening comprises sand blasting said surface at an air pressure between about 10 and about 500 psi, at a spray nozzle angle of incidence to the article surface between about 1 and about 90 degrees, at a distance between about 0.1 and about 300 cm, for a period between more than 0 to 500 seconds.

16. The method of claim 12, wherein said mechanically roughening comprises blasting said surface at an air pressure between about 10 and about 250 psi, at a spray nozzle angle of incidence to the article surface between about 30 and about 90 degrees, at a distance between about 1 and about 100 cm, for a period between about 1 to 30 seconds.

17. The method of claim 12, wherein said mechanically roughening comprises blasting said surface at an air pressure between about 15 and about 150 psi, at a spray nozzle angle of incidence to the article surface between about 45 and about 90 degrees, at a distance between about 5 and about 20 cm, for a period between about 2 to 10 seconds.

18. The method of claim 12, wherein said chemical roughening comprises etching said surface with an etching solution comprising hydrofluoric acid with optional components of ammonium fluoride, acetic acid, water and dissolved silica.

19. The method of claim 12, wherein said chemical roughening comprises etching said surface with an etching solution comprising 20 to 60 vol% hydrofluoric acid, 10 to 30 wt% ammonium fluoride, 20 to 50 vol% acetic acid and 0 to 2 wt% silica for a period between about 0.2 to 2 hours at a temperature between about 10°C to 40°C

20. The method of claim 12, wherein said chemical roughening comprises etching said surface with an etching solution comprising 40 to 50 vol% hydrofluoric acid, 15 to 25 wt% ammonium fluoride, 30 to 40 vol% acetic acid and 0.1 wt% silica for a period between about 0.5 to 1 hours at a temperature between about 15°C to 25°C.

21. The method of claim 12, wherein said mechanically roughening comprises blasting said surface at an air pressure between about 15 and about 150 psi, at a spray nozzle angle of incidence to the article surface between about 45 and about 90 degrees, at a distance between about 5 and about 20 cm, for a period between about 2 to 10 seconds and said chemical roughening comprises etching said surface with an etching solution comprising 40 to 50 vol% hydrofluoric acid, 15 to 25 wt% ammonium fluoride, 30 to 40 vol% acetic acid and 0.1 wt% silica for a period between about 0.5 to 1 hours at a temperature between about 15°C to 25°C to provide a quartz processing article characterized by a surface roughness having a first component with an average deviation from a first mean surface of about 5 to 25 microns, and a second component with an average deviation from a second mean surface of about 0.5 to 2.5 microns.

22. The method of claim 12 further comprising subjecting said article to a high pressure spray of water.

23. The method of claim 12 further comprising applying a silicon layer onto said article and oxidizing at least some of said silicon to silica to fill surface micro cracks.

24. The method of claim 12 comprising mechanically roughening a surface of said article and chemically roughening said surface as a preconditioning of said article prior to use in a semiconductor processing furnace.

25. The method of claim 12 comprising mechanically roughening a surface of said article and chemically roughening said

surface as a treatment of said article subsequent to use of the article in a semiconductor processing furnace.

26. The method of claim 12, comprising withdrawing said article from an LPCVD furnace and mechanically roughening and chemically roughening said surface.

27. The method of claim 26, further comprising returning said article to said LPCVD furnace.

28. The method of claim 26, wherein said article has been cycled into and out of said LPCVD furnace during the processing of semiconductor wafers and prior to said mechanically roughening and chemical roughening.

29. The method of claim 26, wherein said article is a cantilever arm, carrier or boat.

30. A quartz processing article prepared by the method of claim 12.

31. A heat treatment process, comprising preparing a quartz processing article according to the method of claim 12, installing said processing article within a processing chamber of a chemical vapor deposition furnace, loading a substrate to be treated into said processing chamber and supplying a treatment gas into said processing chamber to form a film on a surface of said substrate.

32. A semiconductor processing article comprising a quartz body characterized by a surface roughness, the surface roughness having a first component and a second component, the first component having peaks with a deviation from a first mean surface of about ± 5 to ± 100 microns, and the second component having peaks with a deviation from a second mean surface of about ± 0.5 to ± 10 microns.

33. The semiconductor processing article of claim 32, wherein the first component has peaks with a deviation from the first mean surface of about ± 10 to ± 50 microns.

34. The semiconductor processing article of claim 33, wherein the second component has peaks with a deviation from the second mean surface of about ± 1 to ± 5 microns.